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## WHAT IS CLAIMED IS:

A method for provisioning services to packets sourced from a number of client devices, each of the packets having at least a part of a layer 2 header replaced with a unique bit string, the method comprising:

- a) determining whether or not the packet is entitled to access a particular service based on at least a portion of at least one of (a) a layer 3 address of the packet, and (b) the unique bit string; and
- b) if it is determined that the packet is entitled to access the particular service, then routing the packet.
- 1 2. The method of claim 1 wherein at least a portion of the
- 2 unique bit string represents one of a number of logical
- 3 interfaces.
  - 3. The method of claim 1 wherein at least a portion of the unique bit string corresponds to a VPN-OUI.
  - 4. The method of claim 1 wherein at least a portion of the unique bit string corresponds to a VPN-INDEX.
- 1 \$\\ \mathcal{1}\$. A method for providing various quality of service
- 2 levels to packets sourced from a number of client devices,
- 3 each of the packets having at least a part of a layer 2
- 4 header replaced with a unique bit string, the method
- 5 comprising:
- a) determining a service level to which the packet is entitled based on at least a portion of at least one

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- of (a) a layer 3 address of the packet, and (b) the unique bit string; and
- b) forwarding the packet to a queue associated with the service level determined.
- 1 6. The method of claim 5 wherein at least a portion of the
- 2 unique bit string represents one of a number of logical
- 3 interfaces.
- 1 7. The method of claim 5 wherein at least a portion of the
- 2 unique kit string corresponds to a VPN-OUI.
- 1 8. The method of claim 5 wherein at least a portion of the
- 2 unique bit string corresponds to a VPN-INDEX.
  - A method for monitoring packets sourced from a group of client devices defining a subset of client devices, each of the packets having at least a part of a layer 2 header replaced with a unique bit string, the method comprising:
    - a) determining whether or not the packet belongs to the group of client devices based on at least a portion of at least one of (a) a layer 3 address of the packet, and (b) the unique bit string; and
    - b) if it is determined that the packet does belong to the group of client devices, then
    - i) copying the packet to generate a duplicate packet, and
- ii) forwarding the duplicate packet to a

  monitoring facility.

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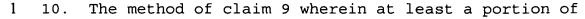
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- 2 the unique bit string represents one of a number of logical
- 3 interfaces.
- 1 11. The method of claim 9 wherein at least a portion of
- 2 the unique bit string corresponds to a VPN-OUI:
- 1 12. The method of claim 9 wherein at least a portion of
- 2 the unique bit string corresponds to a VPN-INDEX.
- 1 13. An apparatus for provisioning services to packets
  2 sourced from a number of client devices, each of the
  3 packets having at least a part of a layer 2 header replaced
  4 with a unique bit string, the apparatus comprising:
  - a) an access control list; and
  - b) an access controller, the access controller including
    - i) means for determining whether or not the packet is entitled to access a particular service based on
      - A) contents of the access control list, and
      - B) at least \a portion of at least one of
      - (a) a layer 3 address of the packet, and (b) the unique bit string, and
    - ii) means for routing the packet if it is determined that the packet is entitled to access the particular service.
- 1 1/4. An apparatus for providing various service levels to
- 2 packets sourced from a number of client devices, each of
- 3 the packets having at least a part of a layer 2 header

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4	replaced with a unique bit string, the apparatus
5	comprising:
6	a) a plurality of queues, each of the plurality of
7	queues associated with a particular service level;
8	b) \a service level list; and

- a service level controller, the service level controller including
  - means for determining a service level to which the packet is entitled based on
    - (A) contents of the service level list, and at least a portion of at least one of (a) a layer 3 address of the packet, and (b) the \unique bit string, and
  - ii) means for forwarding the packet to the one of the plurality of queues associated with the quality of service level determined.
- group of client devices defining a subset of client devices, each of the packets having at least a part of a layer 2 header replaced with a unique bit string, the apparatus comprising:
  - a) a monitoring port for accepting packets of the group of client devices to be monitored;
  - means determining whether\or not an accepted packet belongs to the group of \client devices based on at least a portion of at least one of (a) a layer 3 address of the packet, and (b) the unique bit string; and
  - means for c)
    - copying the accepted packet to generate a duplicate-packet, and-

ii) forwarding the duplicate packet to the
monitoring port,

if it is determined that the packet was sourced by a client device belonging to the group of client

By add